

(19) 世界知的所有権機関  
国際事務局



(43) 国際公開日  
2004 年 12 月 9 日 (09.12.2004)

PCT

(10) 国際公開番号  
WO 2004/106276 A1

(51) 国際特許分類<sup>7</sup>: C07C 59/68, 65/26, 69/736, C07D  
209/12, 277/44, 277/64, 307/80, A61K 31/192, 31/343,  
31/427, 31/428, A61P 3/10

(21) 国際出願番号: PCT/JP2004/007770

(22) 国際出願日: 2004 年 5 月 28 日 (28.05.2004)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願2003-153986 2003 年 5 月 30 日 (30.05.2003) JP  
特願2004-139144 2004 年 5 月 7 日 (07.05.2004) JP

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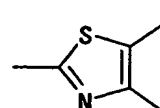
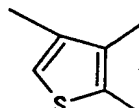
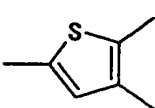
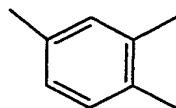
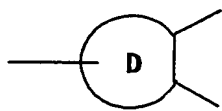
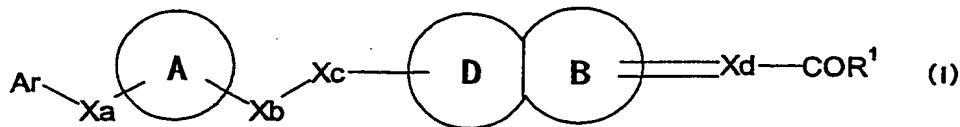
(81) 指定国 (表示のない限り、全ての種類の国内保護が  
可能): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM,  
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UZ, VC, VN, YU, ZA, ZM, ZW.

(84) 指定国 (表示のない限り、全ての種類の広域保護が可  
能): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD,

[続葉有]

(54) Title: CONDENSED RING COMPOUND

(54) 発明の名称: 縮合環化合物



(57) Abstract: A novel condensed ring compound having the activity of regulating GPR40-receptor function and being useful as an insulin secretion promoter or as a preventive/therapeutic agent for diabetes mellitus, etc. More specifically, a condensed ring compound of the formula: (I) [wherein: Ar is a substituted or unsubstituted cyclic group; ring A is a further substituted or unsubstituted ring (provided that the ring is none of thiazole, oxazole, imidazole and pyrazole); each of Xa and Xb independently is a bond or a spacer of 1 to 5 main chain atoms; Xc is O, S, SO or SO<sub>2</sub>; is or ; ring B is a 5 to 7-membered ring; Xd is a bond, CH or CH<sub>2</sub>; ..... is a single bond when Xd is a bond or CH<sub>2</sub>, and a double bond when Xd is CH; and R<sup>1</sup> is a substituted or unsubstituted hydroxyl] or a salt thereof.

[続葉有]



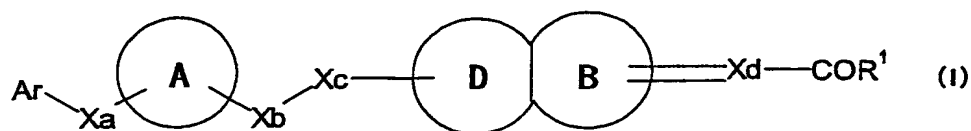
SL, SZ, TZ, UG, ZM, ZW), ユーラシア (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), ユーロッパ (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

添付公開書類:  
— 国際調査報告書

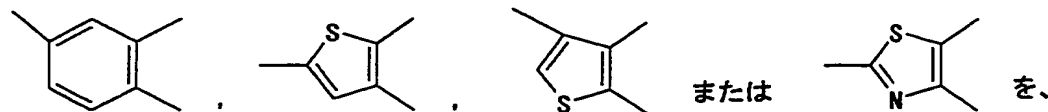
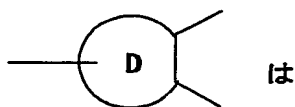
2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

(57) 要約:

本発明は、GPR40受容体機能調節作用を有し、インスリン分泌促進薬や糖尿病などの予防・治療薬として有用な新規縮合環化合物、より詳細には、式



[式中、Arは置換されていてもよい環状基を、  
環Aはさらに置換されていてもよい環（但し、該環はチアゾール、オキサゾール、イミダゾールおよびピラゾールでない）を、  
XaおよびXbは独立して、結合手または主鎖の原子数が1ないし5個のスペーサーを、  
Xcは0、S、SOまたはSO<sub>2</sub>を、



環Bは5ないし7員環を、

Xdは結合手、CHまたはCH<sub>2</sub>を、

.....は、Xdが結合手またはCH<sub>2</sub>であるとき単結合を、XdがCHであるとき二重結合を、

R<sup>1</sup>は置換されていてもよいヒドロキシ基を示す。] またはその塩を提供する。

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/007770

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C07C59/68, 65/26, 69/736, C07D209/12, 277/44, 277/64, 307/80,  
A61K31/192, 31/343, 31/427, 31/428, A61P3/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C07C59/68, 65/26, 69/736, C07D209/12, 277/44, 277/64, 307/80,  
A61K31/192, 31/343, 31/427, 31/428, A61P3/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA (STN), REGISTRY (STN)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02/083616 A1 (SANKYO CO., LTD.), 24 October, 2002 (24.10.02), Claims; examples & JP 2002-371033 A	1-18, 20
A	WO 01/047859 A1 (KARO BIO AB), 05 July, 2001 (05.07.01), Claims; examples & EP 1265839 A1 & JP 2003-519110 A	1-18, 20
A	WO 02/057783 A2 (GLAXO GROUP LTD.), 25 July, 2002 (25.07.02), Claims; examples & EP 1354200 A1	1-18, 20

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search  
09 July, 2004 (09.07.04)

Date of mailing of the international search report  
03 August, 2004 (03.08.04)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/007770

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 19  
because they relate to subject matter not required to be searched by this Authority, namely:  
Claim 19 pertains to methods for treatment of the human body or animal body by surgery or therapy and thus relates to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) and Rule 39.1(iv), to search.
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.